

CLAIMS

1. A device for the *in situ* angular positioning of an incidence probe of the type known as the weather vane type, equipped with a vane that can move about an axis of rotation, said incidence probe being arranged on a wall, said wall comprising temporary fixing means said device to said wall about said incidence probe, characterized in that the device comprises a first structure, known as an enveloping structure (5), equipped with an internal chamber (500) in which said vane (121) can be inserted and immobilized reversibly, it being possible for a structure, known as a fixed structure (3), to be secured to said wall by fixing members (33-330, 34-340) and by said temporary fixing means (331, 341) comprising a member (4) able to move on said fixed structure (3), known as a driving member, a coupling member (7) for coupling said moving driving member (4) and said enveloping structure (5) so as to position the latter (5) and said vane (121) in a determined angular position about said axis of rotation ( $\Delta_s$ ), and means (6) of measuring said angular position, these means being secured to said enveloping structure, so as to obtain said angular positioning.
2. The device as claimed in claim 1, characterized in that said fixed structure (3) consists of a ring (30) arranged concentrically with respect to said incidence probe (1), in that said ring (30) comprises at least penetrating slot portions (31, 32) situated on each side of an axis of symmetry (V), so as to define a circular track, in that said moving driving member consists of a slider (4) able to move along said circular track and in that said slider (4) comprises a member (42) allowing it to be immobilized along said track.
3. The device as claimed in claim 2, characterized in that said immobilizing member (42) comprises a screw-thumbwheel system (43, 420) for tightening, said screw (420) passing through said slot (31, 32) of the circular track so as to retain said slider (4) along said ring (30).
4. The device as claimed in claim 2 or 3, characterized in that said moving driving member (4) comprises a part (41) equipped with a slit (412)

of determined length (l) facing toward the center of said ring (30), in that said coupling member (7) comprises a part (70) allowing it to be secured to said enveloping structure (5), a leaf (71) equipped with a peg (72) at its free end, in that the position and the length of said leaf (71) and the dimensions of said peg (72) are determined so as to allow it to be inserted into said slit (412), in that the material of said leaf (72) is endowed with elastic properties, so as to produce a non-rigid coupling between said enveloping structure (5) and said slider (4), and in that said determined length (l) of the slit (412) allows said coupling some longitudinal play when said slider (4) moves along said ring (4).

5. The device as claimed in any of claims 1 to 4, characterized in that said means of measuring said angular position consist of a digital inclinometer (6) measuring the inclination of said vane (121) with respect to the horizontal (H).

6. The device as claimed in claim 5, characterized in that said enveloping structure (5) comprises slideways (5400a, 5401a) and attachment members (5404a-5406a) allowing said inclinometer (6) to be mounted on and removed from said structure (5) so that said vane (121) can be inserted into said structure and immobilized in this position before said inclinometer (6) is mounted on said structure (5).

7. The device as claimed in one of claims 1 to 6, characterized in that, said vane (121) having a shape known as a prismatic shape, said enveloping structure (5) comprises at least a main body (50) equipped with a penetrating chamber (500) along a longitudinal axis ( $\Delta_L$ ), and in that said chamber (500) has a shape matching that of said flag (121) so that it can be inserted therein, over all or part of its length, by a translational movement parallel to the said longitudinal axis ( $\Delta_L$ ).

8. The device as claimed in one of claims 1 to 6, characterized in that, said vane (121) having a shape known as a prismatic shape, said enveloping structure (5a) comprises at least one main body (50a) in the shape of an inverted U secured to a support (54a) fixed to the ends of said

branches, between the branches of which are inserted a first (52a) and a second (53a) part which complement each other, each being equipped with hollow cavities (520a, 530a) placed facing each other, so as to form a chamber of a shape matching that of said vane (121), so that it can be inserted therein, over all or part of its length, by a translational movement, and in that it comprises a member of the tightening thumbwheel-screw type (51a) allowing said first and second parts (52a, 53a) to be pushed back toward said support (54a) and allowing said vane (121) to be immobilized inside said enveloping structure (5a).

9. The device as claimed in claim 8, characterized in that said first and second parts (52a, 53a) allow a separation clearance of determined amplitude ( $e_1$ ) allowing said insertion only if said vane (121) does not have any deformation exceeding said clearance, so as to check its shape with a predetermined precision.

10. The device as claimed in any of claims 1 to 6, characterized in that, said vane (121) having a shape known as a prismatic shape, said enveloping structure (5b) comprises at least one main body (50b) consisting of two parts (52b, 53b) each forming a half-casing, in that the first part (52b) is fixed with respect to said enveloping structure (5b) and the second (53b) can move in rotation about an axle (56b), said two parts (52b, 53b) being equipped with recessed cavities (520b, 530b) placed facing each other so as to form a partial chamber of a shape matching the shapes of the opposite ends of said vane (121) and so that it can be inserted therein, over all or part of its length, in a translational movement when said two parts (52b, 53b) are in an open position, and in that it comprises a member of the tightening thumbwheel-screw type (51b) allowing said two parts (52b, 53b) to be brought closer together by rotation about said axle (56b) so as to immobilize the said vane (121) inside said enveloping structure (5b).

11. The device as claimed in any of claims 1 to 6, characterized in that, said vane (121) having a shape known as a non-prismatic shape, said enveloping structure (5c) comprises at least one main body (52c)

consisting of a U the internal main face of which has a first recessed cavity (520c) and a second part (53c) arranged between the branches of said U and equipped with a second recessed cavity (530c) facing toward said first cavity (520c) so as to form a chamber of a shape matching that of said vane (121) when they are placed substantially one against the other and so that it can be inserted therein, over all or part of its length, when said first (52c) and second (53c) parts are moved apart, and in that said first part (52c) is equipped with longitudinal slots (5200c, 5201c) along the ends of said branches of the U, so that a spring leaf (57c) that exerts thrust ( $F$ ) toward said second part (53c) can be inserted, push it back toward said first part (52c) and immobilize said vane (121) inside said enveloping structure (5c).

12. The device as claimed in claim 11, characterized in that said first (52c) and second parts allow a separation clearance of determined amplitude ( $e_2$ ) allowing said insertion only if said vane (121) does not have any deformation exceeding said clearance, so as to check its shape with a predetermined precision.

13. The device as claimed in any of claims 1 to 12, characterized in that said enveloping structure (5a) comprises a pair (8) of parts (80, 81) known as locating pieces equipped at their free ends with orifices (800, 810) defining a reference axis ( $\Delta_{ref}$ ), in that said wall ( $A_v$ ) comprising a reference orifice ( $T_{ref}$ ) machined during initial fitting of said incidence probe (1), said orifices (800, 810) of said locating pieces (80, 81) and said reference orifice ( $T_{ref}$ ) are brought into register so as to define an absolute initial position of said vane (121) by calibrating said means (6) of measuring said angular position.

14. The device as claimed in any of the preceding claims, characterized in that said wall is an external wall ( $A_v$ ) of an aircraft.